

CLASSIFYING CELLS BASED ON INFORMATION CONTAINED IN CELL IMAGES

ABSTRACT OF THE DISCLOSURE

Image analysis methods analyze images of cells and place the cells in particular cell
5 cycle phases based upon certain features extracted from the images. The methods can also
quantify the total amount of DNA in a cell based on specific features such as fluorescence
intensity from fluorescent molecules that bind to DNA. Further, the methods can
characterize a cell as mitotic or interphase based on chosen parameters such as the variance
in intensity observed in a cell image and/or the size of a region containing DNA. In one
10 example, image analysis methods can classify the cell into one of the following five phases:
G₁, S, G₂, telophase, and an early stage mitotic phase comprised of prophase, metaphase, and
anaphase.